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ABSTRACT

The primary objective of the College Discovery and Development Program (CDD), funded under the Elementary Secondary Education Act Title I, has been the discovery and development of the college potential of high school youth who are academically and financially disadvantaged. This program was designed to improve the reading and mathematics performance of the students in the target population. The program began in September 1975 at three Title I high schools. Participating students were enrolled in the tenth, eleventh and twelfth grades. The 748 students who were at least two years retarded in reading and mathematics entered the program. Pre and post tests, on site observations and visits provided evidence that the proposed program was implemented as planned. (Author/JM)

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EVALUATION REPORT

Function #
B/E 09-69610

COLLEGE DISCOVERY AND DEVELOPMENT PROGRAM
SCHOOL YEAR 1975-76

Victor W. Bergenn

An Evaluation of a New York City School District educational project funded under Title I of the Elementary and Secondary Education Act of 1965 (PL 89-10) performed for the Board of Education of the City of New York for the 1975-76 school year.

UD0 16813

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TABLE OF CONTENTS

		Page
List of Tables		ii
CHAPTERS		
I	The Program.....	1
II	Evaluative Procedures.....	5
III	Findings.....	7
IV	Summary of Major Findings, Conclusions and Recommendations.....	20
APPENDICIES		
A	Program Abstract.....	23
B	MIR Table 9.....	24
C	OEE Data Loss Form.....	26

LIST OF TABLES

Table		Page
1R	Reading Achievement Gains in Standardized Testing - College Discovery and Development Participants (1975-76).....	10
2R	Average Monthly Reading Achievement Gains - College Discovery and Development Participants (1975-76).....	10
1M	Mathematics Achievement Gains in Standardized Testing - College Discovery and Development Participants (1975-76).....	11
2M	Average Monthly Mathematics Achievement Gains - College Discovery and Development Participants (1975-76).....	11

CHAPTER I

THE PROGRAM

The College Discovery and Development Program (CDD) has been operating with the joint sponsorship of the City University of New York and the New York City Board of Education for eleven years (1965-1976). Its major objective has become the discovery and development of the college potential of high school youth who are academically and financially disadvantaged.

The approach involves both identifying the special nature of these students' educational requirements and providing intensive educational support during their time in the CDD program. The intent of this approach is viewed as one of increasing the likelihood of the students entering College.

The project's reading and mathematics components, funded by Title I ESEA, were supplementary to services and instruction under City tax level funds. These components have a remedial and/or corrective focus in the current programs.

Objectives: The program was designed to demonstrate increments that show statistically significant difference in the reading and mathematics performances of those students who comprised the target population. It was operative during the period of September 1975 to June 1976 at three Title I high schools, one in each of three boroughs: Theodore Roosevelt High School in the Bronx, Thomas Jefferson High School in Brooklyn and Seward Park High School in Manhattan. The students who participated in the CDD Program were enrolled at three

grade levels - 10th, 11th, and 12th, having been admitted in September 1973, 1974, and 1975 respectively. According to the project proposal the enrollment of the three grades at the three schools was to total 812. The actual number of students on the rolls was approximately 800. However, students whose names were listed but for whom test data were not available at either pre and post testing or at pre testing, were not entered into the analyses. The total number of participants was 748 and included those students for whom at least a pre-test score in either the reading or mathematics component was available.

To achieve the objectives of the program small group instruction was used to provide remediation and correction for classes of from 15 to 20 pupils each. Students were provided five, 40 minute periods a week of supplementary instruction in either or both the reading and mathematics component in addition to their regular classes. The program was designed to assist students in identifying and overcoming difficulties in the area of the respective components. In the reading program word attack and comprehension skills necessary for meaningful reading were addressed. The mathematics component focused on overcoming basic skill deficiencies. Students also participated in the regular school curriculum.

The nature of the criterion for participation in the CDD program is a major determinant of the need for remedial practices. Initial selection of students for the CDD program

has been based on socio-economic and academic criterion applied to 9th graders who are viewed as the "potentially able from among the disadvantaged" to academically benefit from a "special program of studies, guidance, enrichment and tutoring."[1] Nominations are solicited from among those students, "who, in spite of potential, would most likely not achieve college entrance without special assistance by the school because of difficulties assumed to be the result of social and/or economic disadvantage."[1] Forms providing the requested information are "completed by the school counselor in consultation with teachers and with the approval of the principal,"[1] and by the candidate.

The "Personal Information Form" and "Nominating Form" include such socio-economic variables as "ethnicity, family structure, living conditions; economic data, employment and education of parents."[2] Among the academic variables included in the forms were: "7th, 8th, and mid-year 9th grade general averages, and the Metropolitan Achievement Test Reading and Mathematics scores."[2]

The above represent some of the variables used by City University personnel in screening for eligibility among 9th year students at New York City junior and senior high schools. Applications of those who are identified as eligible applicants for the "College Development Centers" are then reviewed by a panel of staff members from each of the Centers. The staff selected and enrolled approximately 375 9th year

educationally and economically disadvantaged students. These students entered the program in the 10th year.

The Program Proposal and Evaluation Design do not spell out the degree of deficit in reading and in mathematics required for entry nor do they specify the criteria for initial student selection for the program. However, it is understood that a deficit of two years retardation is required. To be eligible the pupil must be educationally and economically deprived. This information is spelled out in recruitment material along with the criteria for initial student selection. The material is sent to feeder schools, principals, guidance counselors, community agencies and to selection committees.

[1]CDD Program Nomination Form

[2]C.U.N.Y."Discovering and Developing the College Potential of Disadvantaged High School Youth," pg. 55, March 1975.

CHAPTER II

EVALUATIVE PROCEDURES

Objectives of the Evaluation

The purpose of the evaluation was to provide a description of the effect of participation in small group instruction on reading and mathematics grades of the targeted students.

Evaluation Objective No. 1 "To determine whether, as a result of participation in the Reading Component, the reading grades of the students will show a statistically significant difference between the real post-test scores and the anticipated post-test scores.

Subjects: All participants in the reading component.

Method and Procedures: The appropriate level of the California Achievement Test, Reading subtest level 5 will be administered on a pre/post basis in September, 1975 and May, 1976.

Analysis of Data: Data will be analyzed by the "Real (treatment) Post-test vs. Anticipated (without treatment) Post-test design, utilizing a correlated "t"-test."

In this report the actual post-test scores and predicted post-test scores obtained on the California Achievement Tests, 1970 edition, (CAT-70) in Reading were analyzed. The predicted scores were derived from the pre-test scores on the subtests of the CAT-70. The "Historical Regression Design" compared an actual post-test score obtained subsequent to the students experience of the activity in the reading component with a post-test score predicted from the students' achievement on the CAT-70 pre-test using the correlated "t" statistic. The predicted post-test score is a measure of what the student might be expected to achieve on the CAT-70 if no work or remedial help in reading were provided.

Evaluation Objective No. 2 "To determine whether, as a result of participation in the corrective Mathematics Program, the mathematics grade of the students will show a statistically significant difference between the real post-test score and the anticipated post-test score.

Subjects: All participants in the mathematics component.

Method and Procedures: The appropriate form of the California Achievement Test (CAT-70) Mathematics sub-test level 5 will be administered on a pre/post basis in September 1975, and May 1976.

Analysis of Data: In this report the actual post-test scores and predicted post-test scores obtained on the California Achievement Tests (CAT) in Mathematics will be analyzed, utilizing the correlated "t"-test."

The predicted scores were derived from the pre-test scores on the subtests of the CAT-70. The "Historical Regression Design" compared an actual post-test score obtained subsequent to the students experience of the activity in the mathematics component with a post-test score predicted from the students' achievement on the CAT-70 pre-tests, using the correlated "t" statistic. The predicted post-test score is a measure of what the student might be expected to achieve on the CAT-70 if no work or remedial help in mathematics were provided.

Evaluation Objective No. 3 "To determine the extent to which the program, as actually carried out, coincided with the program as described in the Project Proposal."

Six (6) on-site observations and visits determined whether discrepancies existed in the general implementation of the proposed program.

A memorandum dated September 12, 1975 specified modifications in the August 1975 CDD program's Evaluation Design. The modification replaced the S.A.T. instrumentation of the preceding year with the instrumentation specified above.

CHAPTER III

FINDINGS

During the 1975-76 academic year the College Discovery and Development centers at three senior high schools operated a program designed to improve the reading and mathematics performances of those participating high school youth who made up the target population. The decision had been made to use the 1970 edition of the California Achievement Tests, Level 5, in Reading and in Mathematics, for evaluating the effect of the remedial and/or corrective programs.

The CAT-70 represents one of a number of available general achievement batteries. Level 5 of this battery provides a measure of general education achievement in the high school academic curricula. The obtained scores on the Reading and Mathematics subtests can be used to determine the relative standing of the individual student in the different curricular areas in comparison with a uniform normative sample. In addition the score scale can be used to view the student's progress over time, within grade (on a pre/post-test basis) as well as from one grade to another.

The CAT-70 is a survey test in that it indicates the student's level of reading and mathematics achievement. As such it is to be distinguished from tests that are developed with the intent of diagnosing the causes of difficulties in reading or mathematics through an analysis of the student's

strengths and weaknesses in those respective areas.

Achievement Data Results

In compliance with the modified evaluation design specifications and using either Form A or B, Level 5 of the CAT-70 in Reading and Mathematics, students were pre-tested in October, 1975 (as near as was possible to the September 1975 date) and post-tested in May, 1976 (as specified). Those students tested were 10th, 11th, and 12th graders at the three participating high schools. The CDD centers at the school chose either the Form A or Form B (its equivalent) to administer as its pre-test. The form chosen by the center was then administered to all its participating students. The equivalent Form, A or B, which ever was appropriate was then used in obtaining the post-test scores.

Tenth, 11th and 12th year students grade-equivalent scores in reading and mathematics were submitted by each of the schools. A computer analysis of the "Real (treatment) Post-test vs Anticipated (without treatment) Post-test" data was run. A correlate t-ratio of the difference between the group predicted post-test means and the obtained post-test means was used to identify statistically significant findings in both the Reading and Mathematics performances.

The MIR forms, see Appendix B, of this report contain the analyses of a comparison of the two sets of scores for both reading and for mathematics based on actual post-test scores on the CAT-70 and predicted post-test scores. In accord

with the MIR requirements the evaluation design specifications are presented in terms of treatment duration (here either an 8 month or 4 month interval).

Test results in the Reading Component were available for 554 students. This is 82.07 per cent of the total number of 675 students who had taken the pre-test in reading. Reasons for a lack of post-test scores included truancy, discharges or insufficient information (see Appendix C).

Test results in the Mathematics Component were available for 376 students. This is 85.45 per cent of the total number of the 440 students who had taken the pre-test in mathematics. Reasons for missing post-test scores included truancy, discharges, or insufficient information (see Appendix C).

The entries for the 10th, 11th and 12th grades with a treatment interval of 8 months were based on the data from the three participating schools. However, those entries with a treatment interval of 4 months are based on data that was available on a subgroup of the students in one of the schools. These students had experienced half the treatment time (i.e. one semester of remediation) as compared to those who had had the full treatment (i.e. two semesters of remediation) in either mathematics or reading. The results, presented as separate grade entries, with testing dates appropriate for the treatment duration, were obtained using separate historical regression analyses (see MIR Forms, Tables 1R, 2R, 1M and 2M).

TABLE 1R

Reading Achievement Gains in Standardized Testing
College Discovery and Development Participants
(1975-76)

Grade Group	Student No.	Treatment Interval (mos.)	Pre-Test Score (gr.eq.)	Predicted Post-Test Score (gr.eq.)	Actual Post-Test Score (gr.eq.)	Value of t	Level of Signif. (p)
10th	249	8	7.0	7.6	8.0	3.68	.01
11th	167	8	7.8	8.4	8.8	2.08	.05
12th	105	8	8.9	9.4	10.4	4.26	.01
11th	4	4	8.5	8.7	9.7	2.17	n.s.
12th	29	4	9.5	9.8	11.0	4.39	.01

TABLE 2R

Average Monthly Reading Achievement Gains
College Discovery and Development Participants
(1975-76)

Grade Group	Treatment Interval (Sch. Yr.)	Pre-Test (gr.eq.)	Post-Test (gr.eq.)	Absolute Gain	Average Monthly Gain
10th	0.8	7.0	8.0	1.0	1.25
11th	0.8	7.8	8.8	1.0	1.25
12th	0.8	8.9	10.4	1.5	1.87
11th	0.4	8.5	9.7	1.2	3.00
12th	0.4	9.5	11.0	1.5	3.75

TABLE 1M

Mathematics Achievement Gains in Standardized Testing
College Discovery and Development Participants
(1975-76)

Grade Group	Student No.	Treatment Interval (mos.)	Pre-Test Score (gr.eq.)	Predicted Post-Test Score (gr.eq.)	Actual Post-Test Score (gr.eq.)	Value of t	Level of Signif. (p)
10th	217	8	7.1	7.7	8.3	5.48	.01
11th	98	8	7.8	8.2	8.8	4.61	.01
12th	29	8	7.9	8.3	8.6	1.45	n.s.
10th	5	4	8.0	8.2	8.1	-0.48	n.s.
11th	26	4	7.4	7.9	8.4	2.21	.05
12th	3	4	7.3	7.9	6.5	-4.48	.05

TABLE 2M

Average Monthly Mathematics Achievement Gains
College Discovery and Development Participants
(1975-76)

Grade Group	Treatment Interval (Sch. Yr.)	Pre-Test (gr.eq.)	Post-Test (gr.eq.)	Absolute Gain	Average Monthly Gain
10th	0.8	7.1	8.3	1.2	1.50
11th	0.8	7.8	8.8	1.0	1.25
12th	0.8	7.9	8.6	0.7	0.87
10th	0.4	8.0	8.1	0.1	0.25
11th	0.4	7.4	8.4	1.0	2.50
12th	0.4	7.3	6.5	-0.8	-2.00

The samples entered in the 4 month treatment interval, in total, constitute a unique subset that occurred in but one of the schools and comprised a subgroup within that school. These groups experienced half the treatment interval specified in the evaluation design. Three of the samples had less than 10 students, below that necessary to meet existing statistical criteria. In addition, their qualifications for admission to the samples were not completely known. For these reasons one is cautioned against comparing the obtained results with chance expectations.

Separate historical regression analyses were performed on the data for each of the grade levels for both the Reading and Mathematics components. From a consideration of the findings in Tables 1R and 2R it can be seen that those groups with an 8 month treatment interval had, at each grade level, actual mean post-test reading achievement score gains that were, statistically, significantly greater than obtained with the predicted post-test mean scores.

A similar consideration of Tables 1M and 2M shows that the actual mean post-test Mathematics score gains for 10th and 11th grade students with 8 months of treatment were also, statistically, significantly greater than would have obtained with predicted mean post-test scores. In the analysis of the 12th grade, the actual mean post-test score was higher than the predicted post-test, but the difference fell short of achieving the .05 level of significance. These differences indicated

that the objectives of the program associated with increasing mean reading and mathematics scores had been met.

The analyses of the data for the 4 months treatment groups provides results that underscore their uniqueness and limited interpretability. In Tables 1R and 2R the mean pre-test scores (grade equivalents) of these groups, for the Reading Component, are consistently higher than for those groups who had the longer (8 months) treatment interval. However, for the Mathematics Component, see Table 1M and 2M, the mean pre-test scores of the 4 month groups occurred in descending order (10th, 11th and 12 grades). This sequence contrasted with those scores of the 8 month group which occurred in ascending order. The most obvious evidence of uniqueness occurs in Tables 2R and 2M where the average monthly gains range from -2.00 to +3.75 (a range of 5.75). This constrasts with the range of the 8 month group, see Tables 2R and 2M, which was 0.87 to 1.87 (a range of 1.00).

The program coordinator, among others, has expressed concern about the standardized achievement instruments used each year as well as with the changes from year to year. An emphasis on program evaluation could occur at some expense to the individual student's and teacher's performance.

The use of the CAT-70 as well as of other standardized tests could be more fully explored. By providing articulated normative evaluation of reading and arithmetic achievement in graded from 9-12 such tests can be used as an aid in planning

curriculum and evaluation programs. Such planning could further emphasise the continuity of student growth at each grade level in terms of the basic skills and the shared knowledge.

The more appropriate use of the survey test approach is to provide, using single composite scores, a measure of the effectiveness of programming through an analysis of the general level of the student's achievement in reading or mathematics. It is the criterion-referenced approach that has emerged as providing a more appropriate measurement of a program's impact on an individual student. However, the combination of these two approaches is necessary in order to provide the relevant information for educational decisions at the several levels.

The feasibility of criterion-referenced measures in providing narrowly focused diagnostic and prescriptive information through individual student measurement by objectives has been discussed with the project staff and liason.

Adequacy of Materials and Facilities

The classrooms at the three participating schools had ample amounts of instructional materials due in part to the on-going nature of the program and in part to the care with which the materials are managed. Supervised use and storage permit staff and students to know what is available and where it is located.

Students, teachers and educational assistants demonstrated ready familiarity with the available materials and with their uses. In addition, teacher-created materials at some of the sites were available and suited to instructional purposes.

College consultants working with the coordinators, chairmen and teachers helped provide additional materials either directly or indirectly by introducing new ideas. The consultants demonstrated skill and understanding in developing opportunities for additional subject related experiences, supplementary to available remedial or corrective materials.

The available materials included innovative uses of words and arithematic concepts using a game format. In the classroom there was ready access to the generally available reading and mathematics "kits," "series," "systems," as well as, paper backs and in some classes magazines and newspapers.

On the occasion of one site-visit it was evident that a need still existed to further explore the use of home television as an additional CDD resource. A program telecast at that time had combined a visual and auditory sequenced description of the systems of the human body. The topic parallelled subject matter then being studied by some of the CDD students. In this example the latest in instrumentation and equipment provided a resource antedating materials generally available to the current school program.

It is obvious that effective coordination would be required to integrate and pace program and classroom content. However, contact between CDD and network staff could effect mutually beneficial exchanges. By relating vocabulary, concepts and principles to the content of television programming the CDD staffs' remediation and corrective efforts would have

additional relevance. In addition, it would give guidance to students' program selection.

Developments in college text-book publications is also pertinent in terms of additional resource materials. This is because there has been a response on the part of publishers to simplify college text-books to meet the special needs of some readers. Through the use of "readability formulas," word length and sentence structure are analyzed and the text books are prepared in keeping with the students' demonstrated capabilities. Selective use of such books for the high school level could upgrade the educational experience of the CDD students.

The physical facilities in the three participating schools were adequate. Office space for the coordinators and advisors was cramped but did not interfere with the performance of their duties. Small group instruction was generally carried out in regular school classrooms. These rooms were, for the most part, well lighted and airy. The amount of materials present in the classrooms appears to tax existing storage space capacity.

The students were most often observed sitting in rows attending to their individualized tasks. Teachers or educational assistants provided individual assistance usually at the student's desk. In a few classrooms teachers were observed in group instruction. Typically the desks in the classrooms were arranged in rows. A few classrooms with movable desks had semi-circle arrangements with students engaged in either individually pursued tasks or teacher-group instruction.

Staff Training Conferences

Staff training sessions are attended by teachers, counselors, coordinators, educational assistants and the Project Coordinator. The availability of college consultants for these staff training sessions provides an opportunity for a meaningful exchange between the staff at the respective institutions.

The regularity of such sessions, their seminar format, the quality of the exchanges and the qualifications of the participants point to the opportunity for a more formal arrangement. A survey of the staffs' concerns and inputs related to existing disciplines provide the basis for furthering relations between the institutions leading to empirical grounding of various discipline-related-theoretical constructs.

As currently carried out the project effectively serviced the needs of the target population. This conclusion is indicated by the statistically significant improvement in both the reading and mathematics performances of the students at each of the grade levels (except grade 12 in the Mathematics Component where improvement occured but did not reach statistical significance). The statistically significant findings along with the site-visit observations and interviews clearly support the view that the current methods, materials and techniques used in improving reading and mathematic performances are responsible for the success of the project.

Implementation of Previous Recommendations

The 1974-75 CDD report B/E #09-59610 made specific recommendations, along with a final one (the seventh), that the program be recycled. The degree of implementation of each is commented upon as follows:

1. "Adequate secretarial help should be provided."

This recommendation was followed, but mid-year excessing caused the loss of some secretarial services.

2. "CDD remedial class registers should not exceed 10 students."

Budgetary restrictions and adequacy of teaching personnel to handle registers of 15 - 20 students are reasons this recommendation was not implemented.

3. "Adequate office space should be provided at each center."

Space is limited.

4. "Continuance of on-going inservice training, expecially for new personnel, is recommended."

Attendance at training sessions showed this recommendation had been fully implemented.

5. "Funding approval by City and State agencies must be secured earlier so that all aspects of the program can begin in September."

Budgetary procedures lie outside of the authority of the Program Coordinator and her staff, so that this recommendation could not be implemented.

6. "Reappraisal of tutorial program inclusion is recommended."

The Field Coordinator (C.U.N.Y.) has made strenuous efforts in this direction. College student tutors from C.U.N.Y., College Work Study Program, as well as additional tutors obtained through other innovative approaches provided tutoring on a limited scale.

CHAPTER IV

SUMMARY OF MAJOR FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Summary of Major Findings

On the basis of an historical regression analysis of reading and mathematics data for each of three grade levels (10th, 11th and 12th), at three CDD schools, students' performances were found to have improved more than were predicted on the basis of pre-test data. Statistically significant differences between the predicted post-test and actual post-test scores were found. These findings held at each of the three grade levels in reading and at the 10th and 11th grade levels in mathematics. In the analysis of the 12th grade the actual mean post-test mathematics score was higher than the predicted, but the difference did not reach a .05 level of significance.

From site-visit observations and interviews it was evident that the students' and the staffs' knowledgeable use of remediation and/or corrective techniques and materials in adequate facilities supported the statistical findings. Additional resources available to CDD students, and for extending the remediation and corrective functions were indicated.

Attendance at staff training sessions showed active involvement and exchange between qualified practionners. These exchanges provide opportunity for professional guidance as well as development.

Conclusion

Data summarized above along with the site-visit observations and interviews justify the conclusion of effectiveness of this supplementary educational program.

Recommendations

On the basis of the significance of reading and mathematics achievement data presented in the findings; the overall adequacy of materials and facilities in delivering the services to the target population, and the dedication of the staff, it is recommended that the program be recycled for the 1976-77 school year. Additionally, some specific recommendations follow:

1. Diagnostic Procedures:

In recognition of the advances of "criterion referenced testing" in diagnosing educational deficiencies in reading and mathematics, and in deriving educational prescriptions for students therefrom, it is recommended that the CDD Program explore on a pilot basis for the 1976-77 year, certain CRT materials.

a. This approach will provide continuing process evaluation of selected skills to show deficiencies occurring more frequently, on a pilot basis. This might serve as a model for all schools in the program, in the following funded year.

2. Instructional Materials:

Some of the reading and mathematics materials in use in the remedial classes have been found at a content level, below the maturity level of some of the student population.

It is recommended, therefore, that greater exposure to ideas and principles found in more advanced reading material be encouraged. Among specific approaches suggested are:

a. Texts that use simplified language to convey ideas and principles found in more advanced reading material to be introduced.

b. "Hands on" experiences that are relevant to the content of the materials (e.g. mathematics laboratory materials and, in reading, role play experiences) be used.

c. T.V. programs as available that relate directly to reading/mathematical assignments, be coordinated with the instructional materials.

3. Personnel and Facilities:

It is recommended that on-site staff training include graduate level courses to be offered by the cooperating City University Division to further:

a. Knowledge of newer development in tests and measurements such as criterion referenced testing.

b. Knowledge of process (continuous monitoring) evaluation.

c. Knowledge of development in educational technology leading to more effective uses of alternative instructional options.

4. Interaction and Articulation:

It is recommended that the possibility of a more formal structuring of CDD and C.U.N.Y. staff interactions to provide increased articulation between the high school and college curricula, with respect to Title I content, be considered.

Appendix A

College Discovery and Development

B/E #09-69610

Component Codes	Activity Code	Objective Code
6081600	720	801
6091600	720	801

PROGRAM ABSTRACT

The purpose of this program was to provide small group and individualized instruction in components of reading and mathematics using diagnostic and prescriptive techniques. Approximately 800 students, grades 10-12, were served in three New York City High Schools.

The project objectives were that participants show statistically significant differences between the real post-test scores and the anticipated post-test scores, as measured by the California Achievement Tests, in reading and mathematics. An additional objective was to determine the extent to which the program met the specifications of the project proposal.

The cognitive objectives above were achieved as demonstrated by the correlated t-ratios which identify significant results supporting the above objectives. On-site observations and visits attested to the general implementation of the proposed program.

Achievement of the objectives of the program provides support for the activities utilized in the project. It is recommended that the program be recycled. The detailed recommendations appear in the narrative.

Appendix B

Table 9 Historical Regression Design (6-step Formula) for reporting norm referenced achievement tests in Reading and Mathematics.

COLLEGE DISCOVERY AND DEVELOPMENT B/E Function #0969610

In the Table below, enter the requested assessment information about the tests used to evaluate the effectiveness of major project component/activities in achieving cognitive objectives. This form requires means obtained from scores in the form of grade equivalent units as processed by the 6-step formula.(see District Evaluator's Handbook of Selected Evaluation Procedures, 1974, p. 29-31) Before completing this table, read all footnotes. Attach additional sheets if necessary.

Component Code	Activity Code	Test Used 1/	Form Pre	Form Post	Level Pre	Level Post	Total N 2/	Group ID 3/	Number Tested 4/	Pretest Date*	Pretest Mean	Predicted Posttest Mean	Actual Posttest Date	Actual Posttest Mean	Obtained Value of t
6081600	720	CAT-70	A-B	B-A	5	5	296	10th	249	10/75 (8)	7.0	7.6	5/76	8.0	3.68**
							202	11th	167	10/75 (8)	7.8	8.4	5/76	8.8	2.08*
							12	11th	4	2/76 (4)	8.5	8.7	5/76	9.7	2.17 n.s.
							125	12th	105	10/75 (8)	8.9	9.4	5/76	10.4	4.26**
							40	12th	29	2/76 (4)	9.5	9.8	5/76	11.0	4.39**
6091600	720	CAT-70	A-B	B-A	5	5	254	10th	217	10/75 (8)	7.1	7.7	5/76	8.3	5.48**
							6	10th	5	10/75 (4)	8.0	8.2	2/76	8.1	-0.48 n.s.
							116	11th	98	10/75 (8)	7.8	8.2	5/76	8.8	4.61**
							31	11th	26	10/75 (4)	7.4	7.9	2/76	8.4	2.21*

**Signif. $p \leq .01$
*Signif. $p \leq .05$
n.s. No Signif. Diff.

1/ Identify the test used and year of publication (MAT-58, CAT-70, etc.).
2/ Total number of participants in the activity.
3/ Identify the participants by specific grade level (e.g., grade 3, grade 5). Where several grades are combined, enter the 4th and 5th digits of the component code.
4/ Number of pupils for whom both pre and post test data are provided.

(* The number under Pretest Date indicates the number of months of program treatment.)

-2-

24

Table 9 Historical Regression Design (6-step Formula) for reporting norm referenced achievement tests in Reading and Mathematics.

B/E Function #0969610

COLLEGE DISCOVERY AND DEVELOPMENT

In the Table below, enter the requested assessment information about the tests used to evaluate the effectiveness of major project component/activities in achieving cognitive objectives. This form requires means obtained from scores in the form of grade equivalent units as processed by the 6-step formula.(see District Evaluator's Handbook of Selected Evaluation Procedures, 1974, p. 29-31) Before completing this table, read all footnotes. Attach additional sheets if necessary.

Component Code	Activity Code	Test Used 1/	Form Pre	Form Post	Level Pre	Level Post	Total N 2/	Group ID 3/	Number Tested 4/	Pretest Date	Pretest Mean	Predicted Posttest Mean	Actual Posttest Date	Actual Posttest Mean	Obtained Value of t
6 0 9 1 6 0 0	7 2 0	CAT-70	A-B	B-A	5	5	29	12th	27	10/75 (8)	7.9	8.3	5/76	8.6	1.45n.s.
							4	12th	3	2/76 (4)	7.3	7.9	5/76	6.5	-4.48*

**Signif. p. ≤ .01
*Signif. p. ≤ .05
n.s. No Signif. Diff.

1/ Identify the test used and year of publication (MAT-58, CAT-70, etc.).
2/ Total number of participants in the activity.
3/ Identify the participants by specific grade level (e.g., grade 3, grade 5). Where several grades are combined, enter the 4th and 5th digits of the component code.
4/ Number of pupils for whom both pre and post test data are provided.

(T The number under Pretest Date indicates the number of months ofmonths of program treatment.)

30

-2-

25

31

Appendix C

OFFICE OF EDUCATIONAL EVALUATION - DATA LOSS FORM
(attach to NARRATIVE) Function # B/E #09-69610

In this table enter all Data Loss information. Between the MIR and this form, all participants in each activity must be accounted for. The component and activity codes used in completion of the MIR should be used here so that the two tables match. See definitions below table for further instructions.

Component Code	Activity Code	(1) Group I.D.	(2) Test Used	(3) Total N	(4) Number Tested/ Analyzed	(5) Participants Not Tested/ Analyzed N	(5) %	(6) Reasons Why Students Were Not Tested, Or If Tested, Were Not Analyzed	Number
6 0 8 1 6 0 0	7 2 0	10	MAT-70	296	249	47	15.9	Truancy (12) Disch. (5) Transfer (15) Abs. (6)	38
								Insufficient Information (9)	9
		11		202	167	35	17.3	Truancy (9) Disch. (4) Transfer (2) Abs. (4) Intern (1)	
								Deceased (1)	21
								Insufficient Information (14)	14
		11		12	4	8	66.7	Disch. (1)	1
								Insufficient Information (7)	7
		12		125	105	20	16.0	Truancy (1) Transfer (3) Abs. (1) Grad. (1)	6
								Insufficient Information (14)	14
		12		40	29	11	27.5	Insufficient Information (11)	11

(1) Identify the participants by specific grade level (e.g., grade 3, grade 9). Where several grades are combined, enter the last two digits of the component code.
(2) Identify the test used and year of publication (MAT-70, SDAT-74, Houghton Mifflin (IPMS) Level 1 etc.)
(3) Number of participants in the activity.
(4) Number of participants included in the pre and posttest calculations.
(5) Number and percent of participants not tested and/or not analyzed.
(6) Specify all reasons why students were not tested and/or analyzed. If any further documentation is available, please attach to this form. If further space is needed to specify and explain data loss, attach additional pages to this form.
(7) For each reason specified, provide a separate number count.

26

OFFICE OF EDUCATIONAL EVALUATION - DATA LOSS FORM
(attach to NARRATIVE) Function # B/E 09-69610

In this table enter all Data Loss information. Between the MIR and this form, all participants in each activity must be accounted for. The component and activity codes used in completion of the MIR should be used here so that the two tables match. See definitions below table for further instructions.

Component Code	Activity Code	(1) Group I.D.	(2) Test Used	(3) Total N	(4) Number Tested/ Analyzed	(5) Participants Not Tested/ Analyzed N	(5) %	(6) Reasons Why Students Were Not Tested, Or If Tested, Were Not Analyzed	Number
6091600	720	10	CAT-70	254	217	37	14.6	Truancy (7) Disch. (9) Transfer (10) Abs. (1) Loved (2)	29
								Insufficient Information (8)	8
		10		6	5	1	16.6	Insufficient Information (1)	1
		11		116	98	18	15.5	Truancy (4) Disch. (3) Transfer (2) Intern (1)	10
								Insufficient Information (8)	8
		11		31	26	5	16.1	Abs. (1)	1
								Insufficient Information (4)	4
		12		29	27	2	6.89	Truancy (1)	1
								Insufficient Information (1)	1

(1) Identify the participants by specific grade level (e.g., grade 3, grade 9). Where several grades are combined, enter the last two digits of the component code.
(2) Identify the test used and year of publication (MAT-70, SDAT-74, Houghton Mifflin (IPMS) Level 1 etc.)
(3) Number of participants in the activity.
(4) Number of participants included in the pre and posttest calculations.
(5) Number and percent of participants not tested and/or not analyzed.
(6) Specify all reasons why students were not tested and/or analyzed. If any further documentation is available, please attach to this form. If further space is needed to specify and explain data loss, attach additional pages to this form.
(7) For each reason specified, provide a separate number count.

27

OFFICE OF EDUCATIONAL EVALUATION - DATA LOSS FORM
(attach to NARRATIVE) Function # B/E #09-69610

In this table enter all Data Loss information. Between the MIR and this form, all participants in each activity must be accounted for. The component and activity codes used in completion of the MIR should be used here so that the two tables match. See definitions below table for further instructions.

Component Code	Activity Code	(1) Group I.D.	(2) Test Used	(3) Total N	(4) Number Tested/ Analyzed	(5) Participants Not Tested/ Analyzed		(6) Reasons Why Students Were Not Tested, Or If Tested, Were Not Analyzed	
						N	%		Number
								Insufficient Information (1)	1
6091600	720	12	CAT-70	4	3	1	25.0		

(1) Identify the participants by specific grade level (e.g., grade 3, grade 9). Where several grades are combined, enter the last two digits of the component code.
(2) Identify the test used and year of publication (MAT-70, SDAT-74, Houghton Mifflin (IPMS) Level 1 etc.)
(3) Number of participants in the activity.
(4) Number of participants included in the pre and posttest calculations.
(5) Number and percent of participants not tested and/or not analyzed.
(6) Specify all reasons why students were not tested and/or analyzed. If any further documentation is available, please attach to this form. If further space is needed to specify and explain data loss, attach additional pages to this form.
(7) For each reason specified, provide a separate number count.

28